Installing Linux on a laptop with Windows 8 pre-installed

1. Try and check whether your laptop supports Linux, and you can get into the bios program. Have you got a user manual with instructions for entering bios, if not then google for it.

2. Before doing anything see if you can backup your windows installation to a full system image. Personally I don't have much confidence in the images Windows creates, but my backup program couldn't handle the disk GPT partitions.

3. Either buy a magazine disk or download a 64 bit version of your favourite Linux distro. A magazine disk would normally already be bootable, otherwise create a bootable usb drive or DVD, either using the Linux utility or on Windows try pendrivelinux.com or unetbootin.sourceforge.net

4. Preparation Notes

The following is a small guide to install Ubuntu with a Pre-Installed Windows 8 system. The steps HAVE TO BE done in the precise order I mention them here to get everything started. If a step is skipped or done before another, you will most likely end up with some of the problems mentioned at the bottom of this guide.

For the time, you need to do it via a LiveCD, LiveDVD or LiveUSB, assuming (actually requiring) you have the following points:

- You are using a 64-bit version of at least Ubuntu 12.04.2. 32-bit versions will not work.
- Your system came with Windows 8 pre-installed (And you do not want to delete it)
- You are not installing Ubuntu inside of Windows 8 but rather alongside of it. Inside of it is impossible because it needs Wubi which is unsupported.
- Your system has UEFI activated (And can not be disabled) with Secure Boot.
- You have already created a free space for Ubuntu from within Windows 8 with at least 8 GB (I recommend to leave at least 20 GB or so, so you can test the hell out of it).
- You made sure that you actually have free space left on the drive to create the needed partitions and you also made sure that you did not have all primary partitions used (In case of using an MS-DOS Scheme) because this will create a problem with the Ubuntu installer showing you only the

"Replace Windows" option instead of the "Alongside Windows" option.

•You know how to burn a LiveCD, LiveDVD or LiveUSB from within Windows 8. If not, look for Windows apps that can do that for you. *[I do mine in another PC with Ubuntu.]*

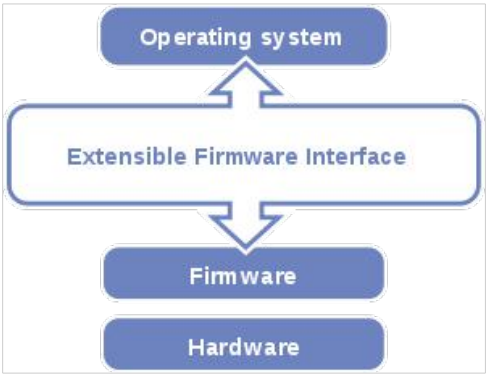
•Windows 8 was not shutdown in either Hibernation mode or any other mode ('fast start-up' which is by default on Windows 8) that leaves it on a saved state. Shutdown Windows 8 in the normal way, with the shutdown option. This will prevent other problems related to this from appearing. Read the bottom (**TROUBLESHOOT**) of this answer for more information regarding this point.

•You are installing on an MS-DOS type disk scheme (You can only have 4 primary partitions as opposed to GPT Scheme) which has at least 1 Free Primary Partition. Remember that if you are already using 4 Primary Partitions no partitions will appear on the Ubuntu installer since there are no more Primary partitions left to use (MS-DOS type partitions are limited to 4 Primary ones, GPT are limited to 128). This happens a lot on many laptops that come with 4 pre-created primary partitions. If you are installing on a GPT type partition and want it to boot, you need to leave UEFI enabled.

PLEASE READ THE ABOVE POINTS SINCE MANY USERS JUMP THIS PART AND WHEN THEIR PROBLEMS ARE FOUND IT NORMALLY IS BECAUSE THEY DID NOT FOLLOW ONE OF THEM.

What is UEFI?

Unified Extensible Firmware Interface



Extensible Firmware Interface's position in the software stack.

In computing, the **Unified Extensible Firmware Interface** (**UEFI**) (pronounced as an initialism U-E-F-I or like "unify" without the *n*)[a] is a specification that defines a software interface between an operating system and platform firmware. UEFI is meant to replace the Basic Input/Output System (BIOS) firmware interface, originally present in all IBM PC-compatible personal computers.[2][3] In practice, most UEFI firmware images provide legacy support for BIOS services. UEFI can support remote diagnostics and repair of computers, even without another operating system.[4]

UEFI and Windows 8

Historically, Windows hasn't got along well with UEFI hardware. In fact, back in 2006, when enthusiasts tried installing Windows XP on the first Intel-based iMacs, they were stymied precisely because Windows XP – the current version at that time – has no ability to boot on an EFI system. The situation was resolved only when Apple issued a firmware update allowing Mac hardware to emulate a traditional BIOS (along with a driver pack enabling Apple's hardware to work in Windows). This shows the power of UEFI's open-ended design.
Windows Vista and 7 didn't fully support UEFI either, but there were good reasons for this. A 32-bit operating system can boot only from 32-bit UEFI firmware, while a 64-bit OS requires 64-bit firmware. When Microsoft introduced Windows Vista in both 32- and 64-bit flavours, nobody wanted to tell users they'd have to reprogram their motherboards to match their Windows edition - and motherboard manufacturers didn't want to support two parallel versions of their UEFI firmware anyway. So Microsoft settled on a compromise: UEFI was supported natively by 64-bit editions of Vista, and latterly Windows 7, while 32-bit editions continued to require a BIOS, either real or emulated.
In Windows 8, the situation has changed, and Microsoft has wholeheartedly embraced UEFI. Its certification standards require that all new desktops, laptops and tablets sold with Windows 8, and bearing the Windows 8 sticker, must use a UEFI BIOS. You can still upgrade an older non-UEFI system to Windows 8, however – you'll simply miss out on a handful of useful features

However, UEFI provides more far-reaching benefits, too. A major one is the ability to work better with modern hard disks. The original PC BIOS system was designed to work with the Master Boot Record (MBR) partitioning system, which only supports disks of up to 2TB, and no more than four partitions per disk. This may have seemed like plenty of headroom back when the system was introduced in 1983, but today it feels restrictive.
UEFI brings full support for the newer GUID Partition Table (GPT) partitioning scheme. This system can accommodate up to 128 partitions per disk, with a total capacity of 8ZB – equivalent to eight billion terabytes. Some modern BIOS implementations can handle GPT disks, but with limitations: many are unable to boot from very large disks, limiting the usefulness of the latest 3TB drives.
UEFI also allows a generally closer degree of integration between the operating system and the pre-boot environment – something Windows 8 takes advantage of in its Advanced Startup Options. If you're using a UEFI system, you can select a device to boot from directly within the Windows 8 interface. (This option also appears if Windows 8 fails to start up properly, and takes you to the Troubleshooting screen.) If you're using non-UEFI hardware, this option won't be available: to boot from a device other than the default, you'll have to jump in when the computer restarts and configure your BIOS directly.

Secure Boot

The most significant UEFI feature related to Windows 8 is Secure Boot – a system that ensures only authorised operating systems can start up on your PC. It works by reading a cryptographic signature embedded in the OS bootloader and verifying it against a database of authorised keys stored within the UEFI firmware. When you buy a new Windows 8 PC, laptop or tablet, the relevant key is preinstalled by the manufacturer, so you won't even know Secure Boot is active. However, if you try to start a different operating system, the UEFI platform will refuse to boot.
This may not sound like a good thing. Indeed, when it was first announced that all new Windows 8 hardware would come with Secure Boot enabled, there was uproar among the technorati. Microsoft was accused of shutting out competing operating systems such as Ubuntu Linux, and of limiting customers' ability to run whatever software they wanted on their PCs.
However, Secure Boot brings real benefits, as we'll discuss below. And on regular Windows 8 laptop or desktop systems it doesn't stop you from doing anything. Although it's enabled on all new Windows 8 systems, you can always go into the UEFI settings and turn it off with a click. Once this is done, you can boot whichever operating system you like. If you're upgrading older hardware to Windows 8 then it's likely that Secure Boot won't even be an issue, as it requires the latest version of UEFI to function.

You can also leave Secure Boot enabled and manually authorise other operating systems' bootloaders, in addition to the Windows 8 one. For example, you might add a key for Ubuntu to the Secure Boot database, enabling both Windows 8 and Ubuntu to start, while continuing to disallow other, unknown operating systems. The precise process for generating a Secure Boot key should be detailed in the manual for your motherboard or laptop, or in the installation instructions for the operating system.
What's more, Microsoft has agreed to allow other recognised operating system publishers to use the same bootloader key as Windows 8 (for a fee). Fedora Linux has already done this, so you can install and boot Fedora on a Windows 8 system with no additional configuration required.

Read more: UEFI BIOS explained | Analysis | Features | PC Pro http://www.pcpro.co.uk/features/381565/uefi-bios-explained/4#ixzz3IiFlChs8

5. Before you go any further, it may be an idea to try and run the Linux LiveCD to check it will run on your laptop and keyboard and screen display operate. You may need to use a function key to get a boot menu, or maybe even enter the bios to add usb to the boot order. You will need to disable fast startup (see later) and you may also need to disable secure boot as well.

Boot From Removable Media

To boot your computer from removable media — for example, to boot a Linux live USB drive — you'll need to access the boot options screen. Select the Boot Device option and choose the device you want to boot from. Depending on the hardware your computer has, you'll see a variety of options like USB drive, CD/DVD drive, SD card, network boot, and so on.

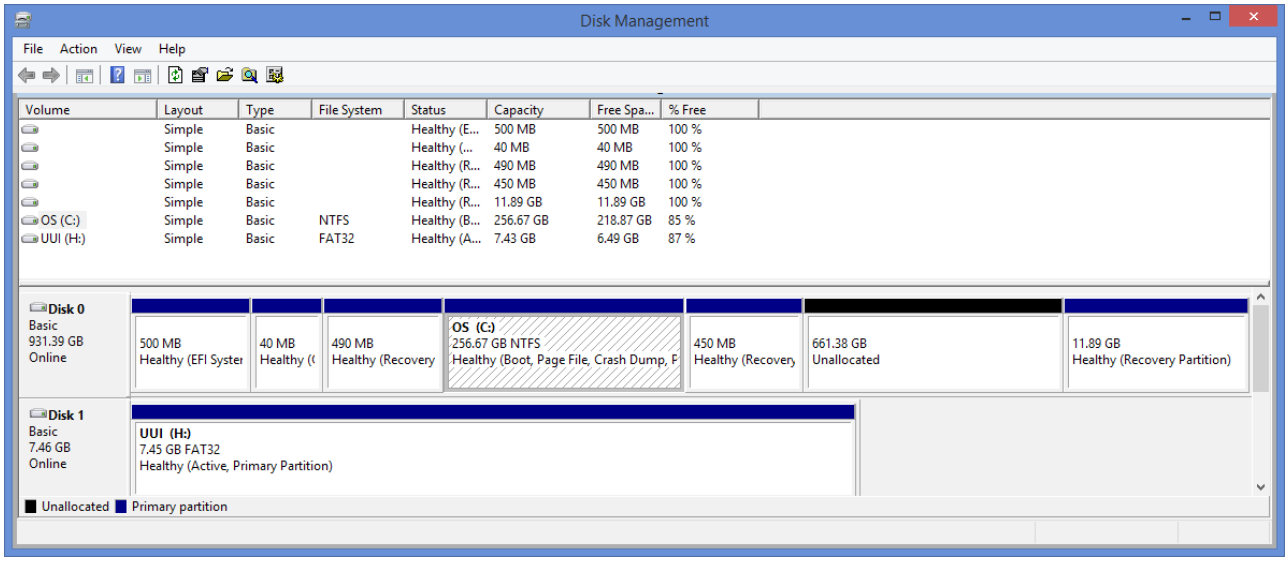
Choose an option
Continue
Exit and continue to Windows 8.1
Turn off your PC
Use a device
Use a USB drive, network connection, or Windows recovery DVD
Troubleshoot
Refresh or reset your PC, or use advanced tools

6. In Windows 8 go into Disk Management and select the option to 'Shrink Volume'. You don't have to accept the maximum shrinkage, decide what is most practical – for you. Make a note of the size of the free space created.

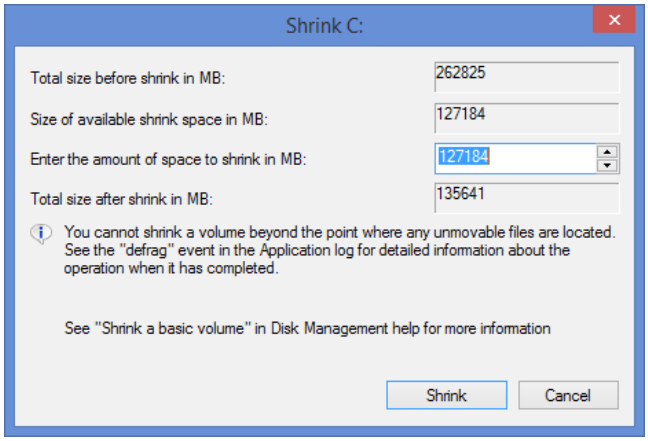
Run **compmgmt.msc** on Windows 8. From there on, create a partition with enough size. Note that I mention creating this **FROM** Windows 8 because I have had cases where doing the partition from the LiveUSB rendered Windows 8 unbootable, even after doing a boot repair. So to remove that problem or have a greater chance of removing it (Or simply skipping the problem altogether) and making sure both systems work, partition your hard drive from within Windows 8 first.

Note: I ran Disk Management in Windows 8.1 by pressing the Windows key and X to bring up the menu which includes Control Panel and Disk Management.

This will bring up the "Disk Management" screen.


Disk Management
File Action View Help
Volume Layout Type File System Status Capacity Free Spa... % Free
Simple Basic Healthy (E... 500 MB 500 MB 100 %
Simple Basic Healthy (... 40 MB 40 MB 100 %
Simple Basic Healthy (R... 490 MB 490 MB 100 %
Simple Basic Healthy (R... 450 MB 450 MB 100 %
Simple Basic Healthy (R... 11.89 GB 11.89 GB 100 %
OS (C:) Simple Basic NTFS Healthy (B... 256.67 GB 218.87 GB 85 %
UUI (H:) Simple Basic FAT32 Healthy (A... 7.43 GB 6.49 GB 87 %
Disk 0
Basic
931.39 GB
Online
500 MB
Healthy (EFI Syster
40 MB
Healthy ((
490 MB
Healthy (Recovery
OS (C:)
256.67 GB NTFS
Healthy (Boot, Page File, Crash Dump, F
450 MB
Healthy (Recovery
661.38 GB
Unallocated
11.89 GB
Healthy (Recovery Partition)
Disk 1
Basic
7.46 GB
Online
UUI (H:)
7.45 GB FAT32
Healthy (Active, Primary Partition)
Unallocated
Primary partition

To shrink the drive, right click on the "OS (C:)" volume and select "Shrink volume".


Shrink C:
Total size before shrink in MB:
262825
Size of available shrink space in MB:
127184
Enter the amount of space to shrink in MB:
127184
Total size after shrink in MB:
135641
You cannot shrink a volume beyond the point where any unmovable files are located. See the "defrag" event in the Application log for detailed information about the operation when it has completed.
See "Shrink a basic volume" in Disk Management help for more information
Shrink
Cancel

A screen will appear showing how much you can shrink the drive by. You can of course choose to shrink the drive by less than offered but never go for any more than offered as you will break your Windows 8.1 operating system if you do.

Click "Shrink" to continue.

When you are finished you will see that there is a lot of unpartitioned space. This is where Ubuntu will be installed. Remember the size of that space, as Ubuntu will just show the size of the spaces available and won't actually show which space has Windows installed and which is free.

7. Deactivate Fast Startup – this can be done in Windows 8:

To deactivate the fast startup, you should go the “Control Panel” and select the “Energy Options”.

On the left side, select “Choose what the power button does”.

Then activate, on the top the page: “Change settings that are currently unavailable”.

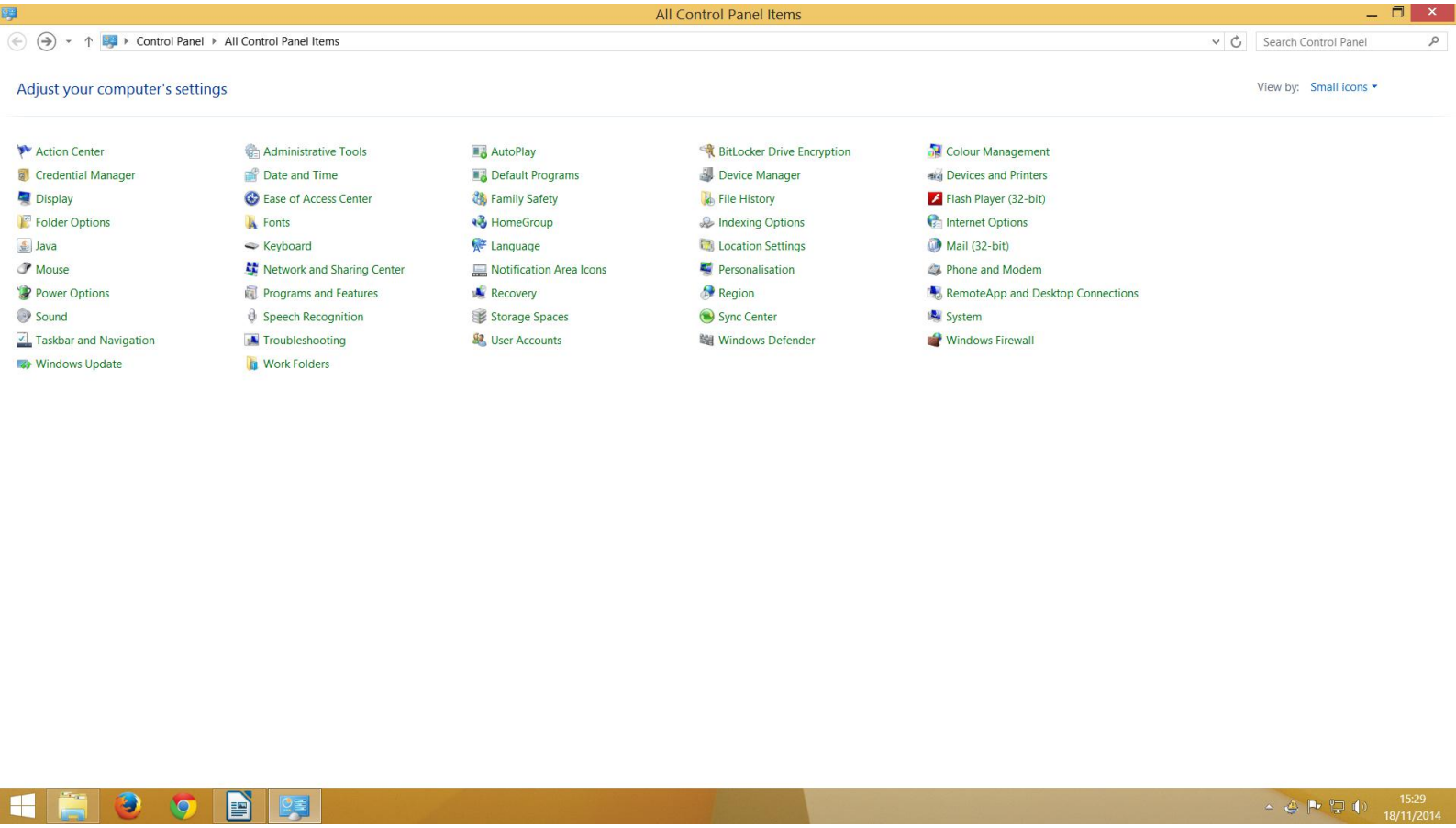
At the bottom at the page, at “shutdown Settings”, deactivate the option “Turn On Fast Startup”.

And save the new settings.

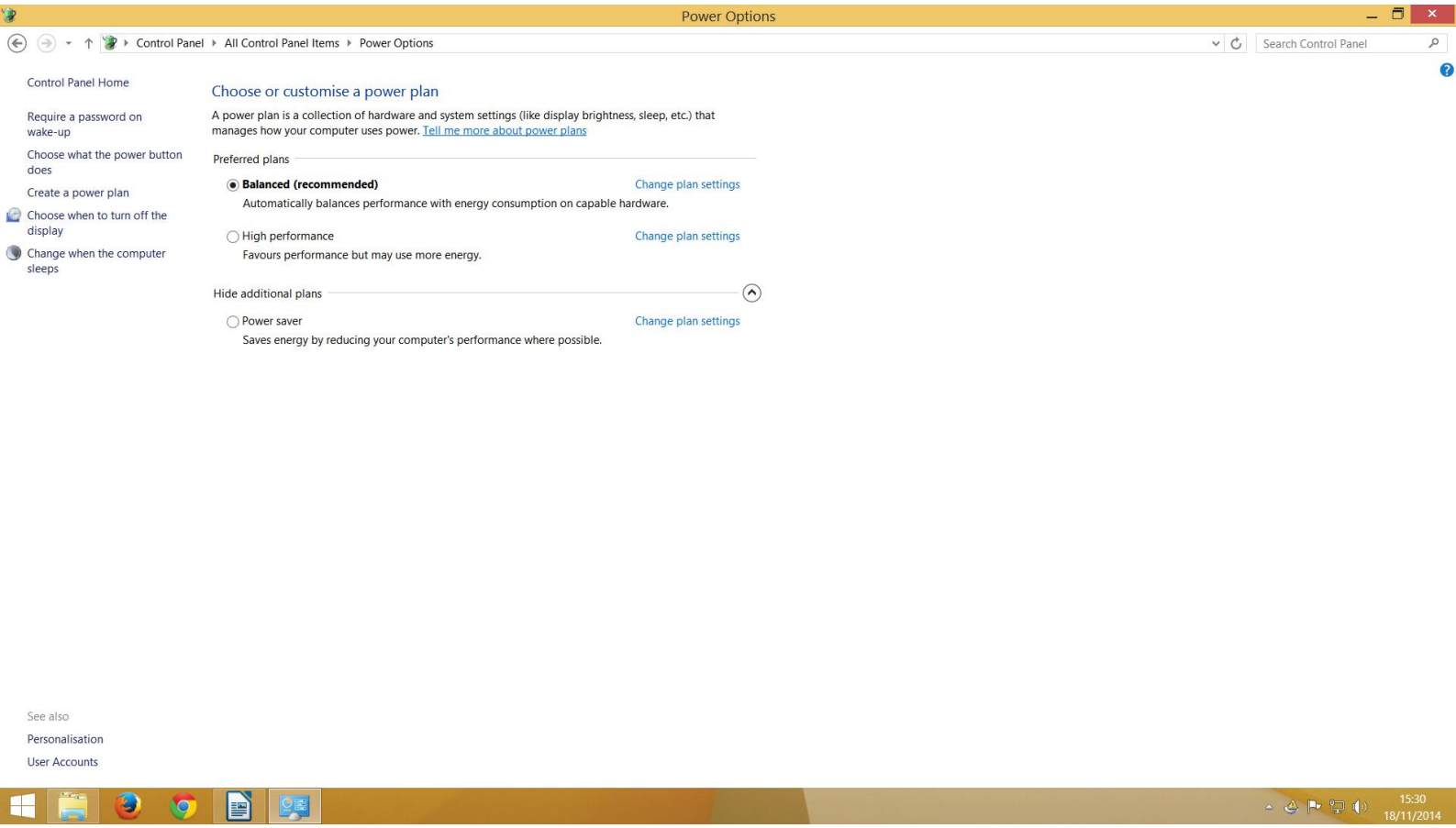
To be able to boot to your Ubuntu USB drive you will need to turn off the fast boot option.

Press the "super" key (Windows key) and X key together.

When the "Control Panel" appears click on the "System and Security" heading in Windows 8 or just select Power Options in 8.1.


All Control Panel Items
Control Panel ▸ All Control Panel Items
Search Control Panel
Adjust your computer's settings
View by: Small icons
Action Center
Administrative Tools
AutoPlay
BitLocker Drive Encryption
Colour Management
Credential Manager
Date and Time
Default Programs
Device Manager
Devices and Printers
Display
Ease of Access Center
Family Safety
File History
Flash Player (32-bit)
Folder Options
Fonts
HomeGroup
Indexing Options
Internet Options
Java
Keyboard
Language
Location Settings
Mail (32-bit)
Mouse
Network and Sharing Center
Notification Area Icons
Personalisation
Phone and Modem
Power Options
Programs and Features
Recovery
Region
RemoteApp and Desktop Connections
Sound
Speech Recognition
Storage Spaces
Sync Center
System
Taskbar and Navigation
Troubleshooting
User Accounts
Windows Defender
Windows Firewall
Windows Update
Work Folders
15:29
18/11/2014

Now click on "Power Options".


Power Options
Control Panel ▸ All Control Panel Items ▸ Power Options
Search Control Panel
Control Panel Home
Require a password on wake-up
Choose what the power button does
Create a power plan
Choose when to turn off the display
Change when the computer sleeps
Choose or customise a power plan
A power plan is a collection of hardware and system settings (like display brightness, sleep, etc.) that manages how your computer uses power. Tell me more about power plans
Preferred plans
Balanced (recommended)
Change plan settings
Automatically balances performance with energy consumption on capable hardware.
High performance
Change plan settings
Favours performance but may use more energy.
Hide additional plans
Power saver
Change plan settings
Saves energy by reducing your computer's performance where possible.
See also
Personalisation
User Accounts
15:30
18/11/2014

Click on "Choose what the power button does".

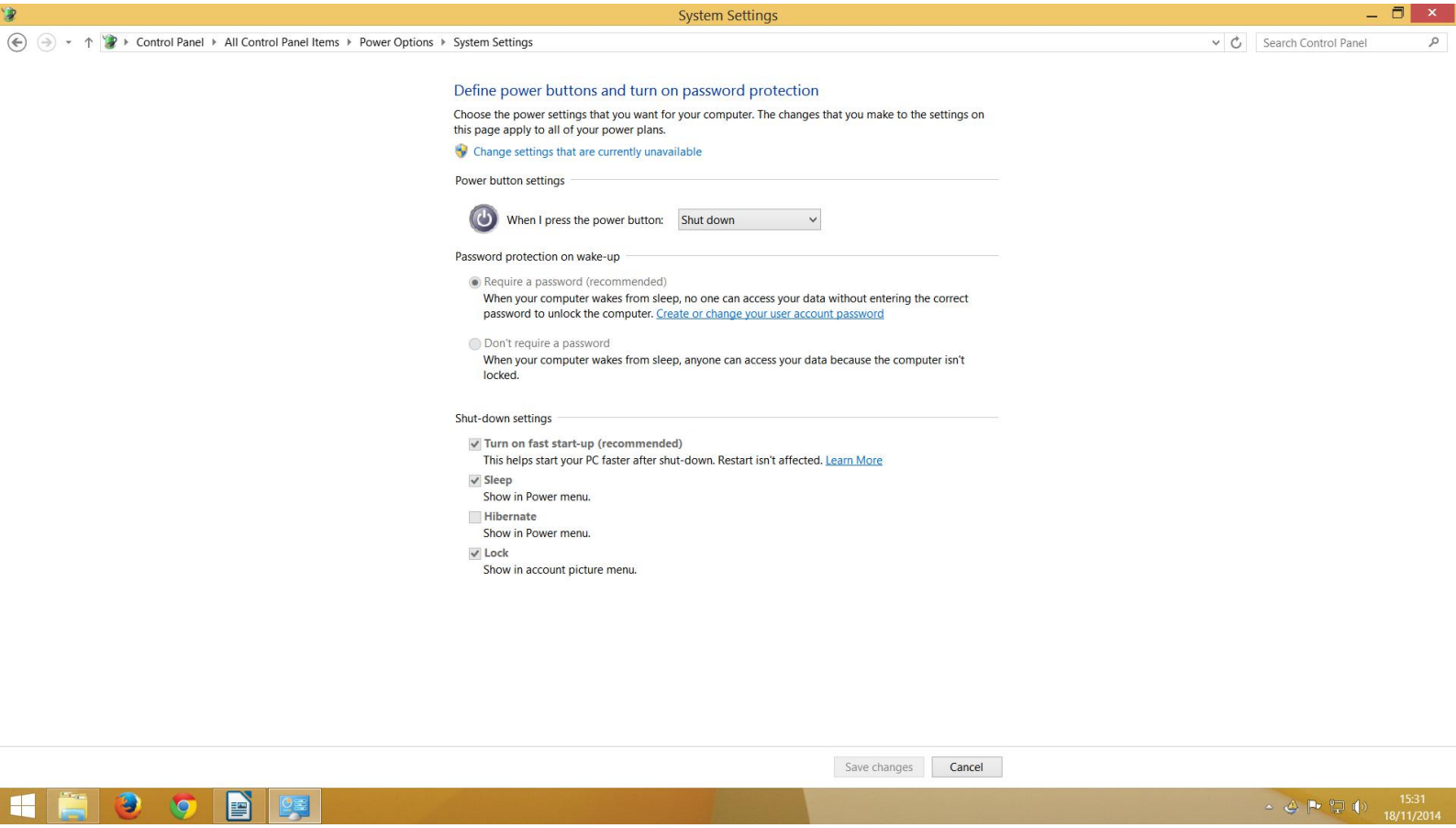
A screen will appear with the heading "Define power buttons and turn on password protection".

Scroll down until you see "Shutdown Settings".

An option should be available called "Turn on fast startup" (recommended).

Uncheck this option.

Click "Save Changes".


System Settings
Control Panel
All Control Panel Items
Power Options
System Settings
Search Control Panel
Define power buttons and turn on password protection
Choose the power settings that you want for your computer. The changes that you make to the settings on this page apply to all of your power plans.
Change settings that are currently unavailable
Power button settings
When I press the power button:
Shut down
Password protection on wake-up
Require a password (recommended)
When your computer wakes from sleep, no one can access your data without entering the correct password to unlock the computer. Create or change your user account password
Don't require a password
When your computer wakes from sleep, anyone can access your data because the computer isn't locked.
Shut-down settings
Turn on fast start-up (recommended)
This helps start your PC faster after shut-down. Restart isn't affected. Learn More
Sleep
Show in Power menu.
Hibernate
Show in Power menu.
Lock
Show in account picture menu.
Save changes
Cancel
15:31
18/11/2014

8. Disable Secure Boot:

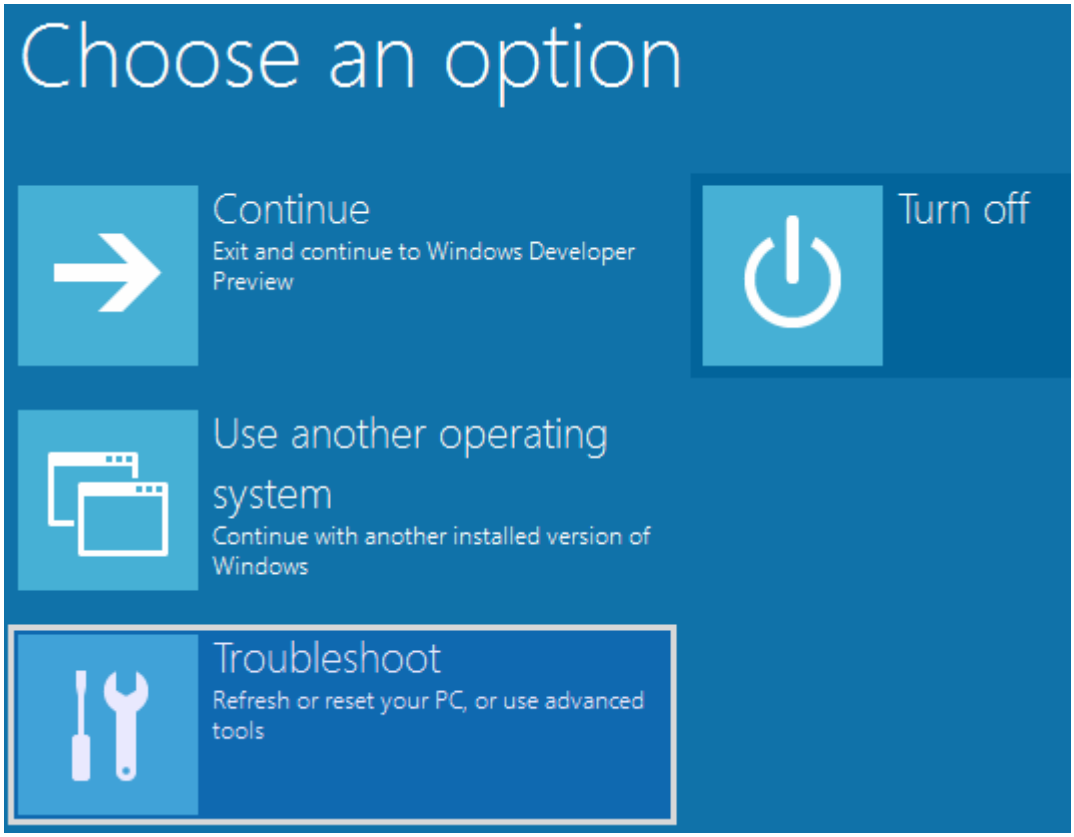
We first need to know with what type of motherboard options we are dealing with. Open a terminal (By going to the start menu and typing `powershell` for example) and run the terminal as an Administrator (Right Click the app that will show in the start menu and select Run as Administrator). Now type `Confirm-SecureBootUEFI`. This can give you 3 results:

True - Means your system has Secure boot and is Enabled
False - Means your system has Secure boot and is Disabled
Cmdlet not supported on this platform - Means your system does not support Secure boot and most likely you do not need this guide. You can install Ubuntu by simply inserting the LiveCD or LiveUSB and doing the installation procedure without any problems.

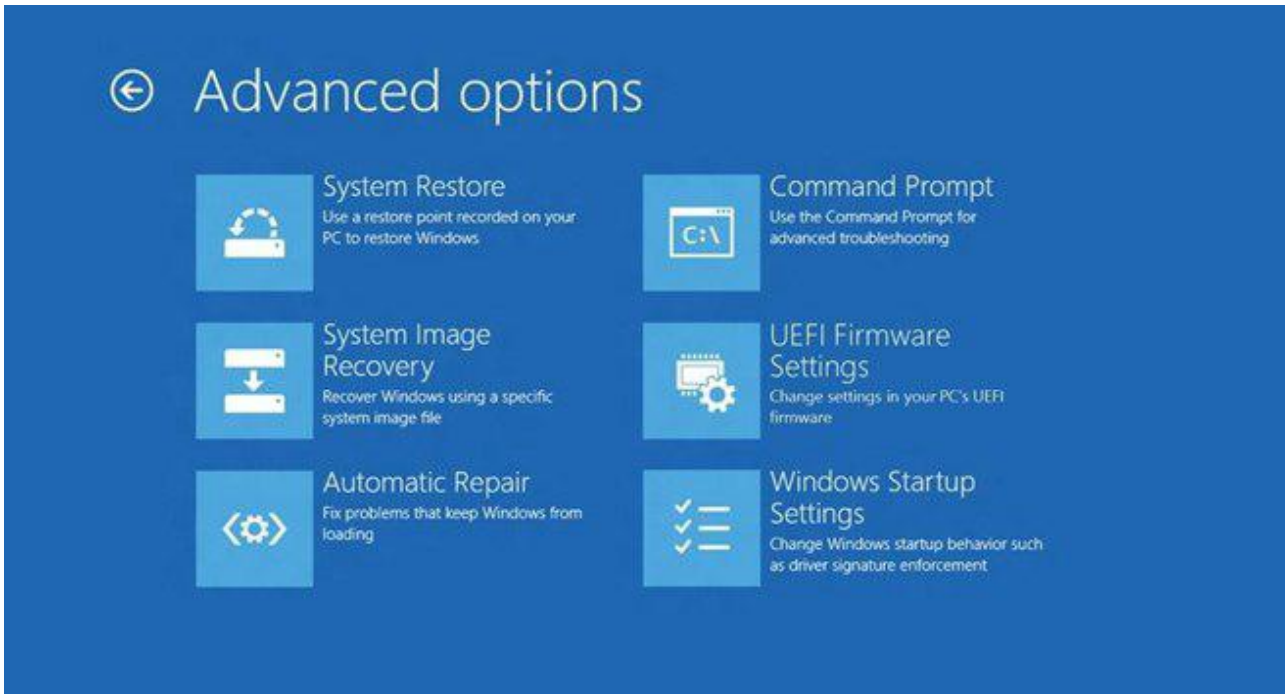
If you have it **Enabled** and have the necessary partitioning done then we can proceed with this guide. After booting into Windows 8 we go to the power off options and while holding the SHIFT key, click on **Restart**.

(This is a really old trick on most Windows, even since Windows 3.1 where you hold a key to do something special when rebooting)

Windows 8 will show you a totally different restart window:

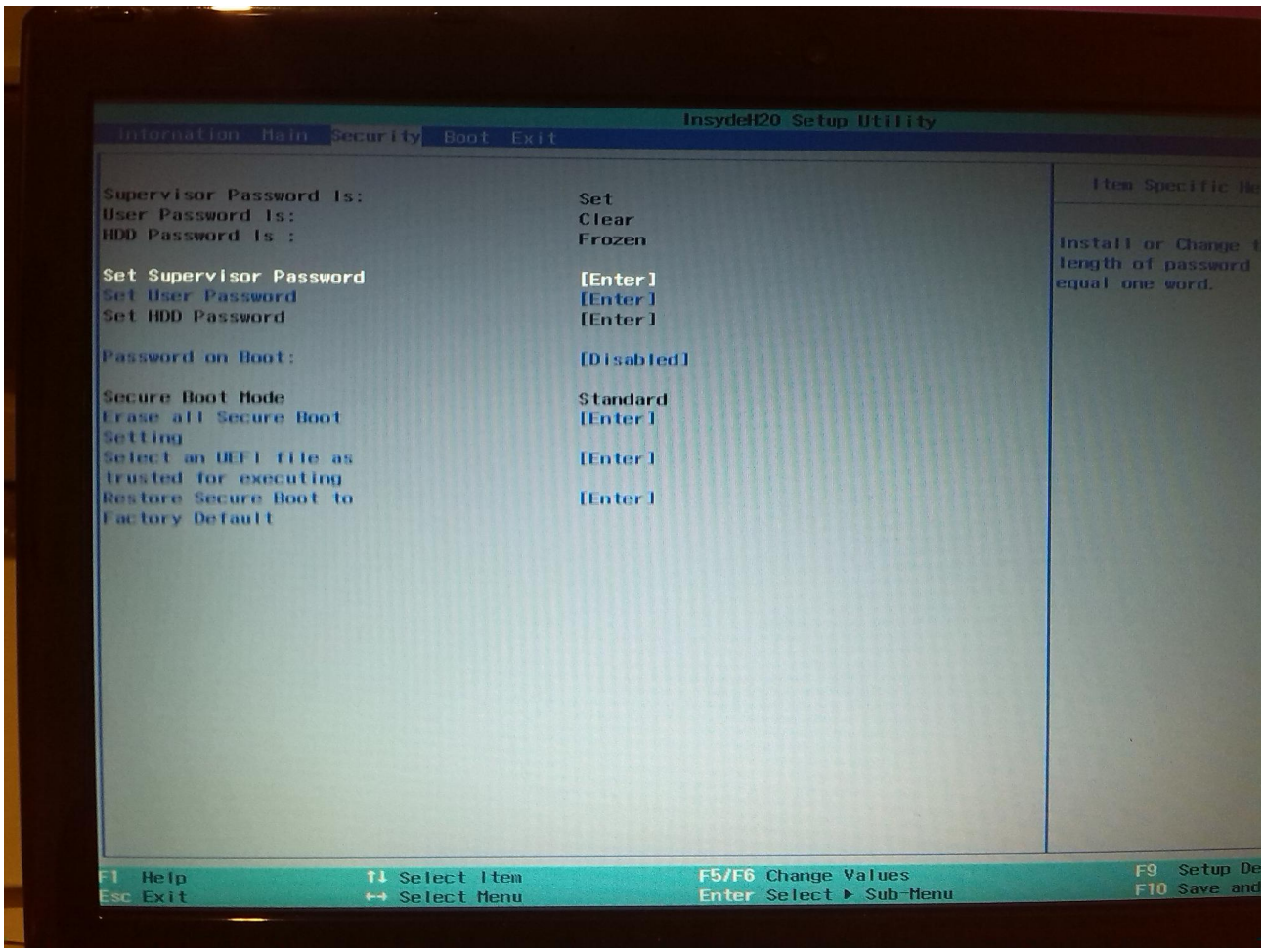

Choose an option
Continue
Exit and continue to Windows Developer Preview
Turn off
Use another operating system
Continue with another installed version of Windows
Troubleshoot
Refresh or reset your PC, or use advanced tools

When you get the menu above, select **Troubleshoot**
You will then get the following options:


Advanced options
System Restore
Use a restore point recorded on your PC to restore Windows
Command Prompt
Use the Command Prompt for advanced troubleshooting
System Image Recovery
Recover Windows using a specific system image file
UEFI Firmware Settings
Change settings in your PC's UEFI firmware
Automatic Repair
Fix problems that keep Windows from loading
Windows Startup Settings
Change Windows startup behavior such as driver signature enforcement

When you reboot a screen similar to the one above will appear. The option you should choose is the UEFI Firmware Settings.

THIS IS AN IMPORTANT PART
The system will reboot and you will be allowed to go to the **BIOS** (If not press the appropriate key, some common are `DEL`,`F2` or `F10`).
In this part I can't help much since each BIOS is different for each Motherboard model. There are 2 options you can take here, both of which are optional since Ubuntu might install without any problems at all. You can either look for an option to **disable Secure Boot** or an option to **disable UEFI**. In some cases you will be able to find both, it will show in the BIOS as an option called **Secure Boot** or **Enable UEFI**.
If you find this options, then depending if you can not install Ubuntu with Secure Boot enable then disable Secure Boot (Remember to report this as a bug using `ubuntu-bug shim`), to be able to still stay in UEFI mode and also be able to Boot with Ubuntu. In some motherboards, this will be the only option you actually need to change and also will be the only option you see related to UEFI because they will not offer the possibility to disable UEFI.


InsydeH20 Setup Utility
Information Main Security Boot Exit
Supervisor Password Is: Set
User Password Is: Clear
HDD Password Is : Frozen
Set Supervisor Password [Enter]
Set User Password [Enter]
Set HDD Password [Enter]
Password on Boot: [Disabled]
Secure Boot Mode Standard
Erase all Secure Boot Setting [Enter]
Select an UEFI file as trusted for executing [Enter]
Restore Secure Boot to Factory Default [Enter]
Item Specific
Install or Change
length of password
equal one word.
F1 Help
Esc Exit
↑↓ Select Item
↔ Select Menu
F5/F6 Change Values
Enter Select ▶ Sub-Menu
F9 Setup De
F10 Save and

DUAL BOOT ISSUES

I would also like to mention an important note here. If you happen to install Ubuntu in Legacy Mode (No SecureBoot) you might have problems booting both, Windows and Ubuntu at the same time since they will both not appear on a Dual-Boot Menu. If you have Windows on UEFI for example and you install Ubuntu on Legacy Mode, you will only be able to boot to Ubuntu on a Legacy Mode and Windows on an UEFI Mode.

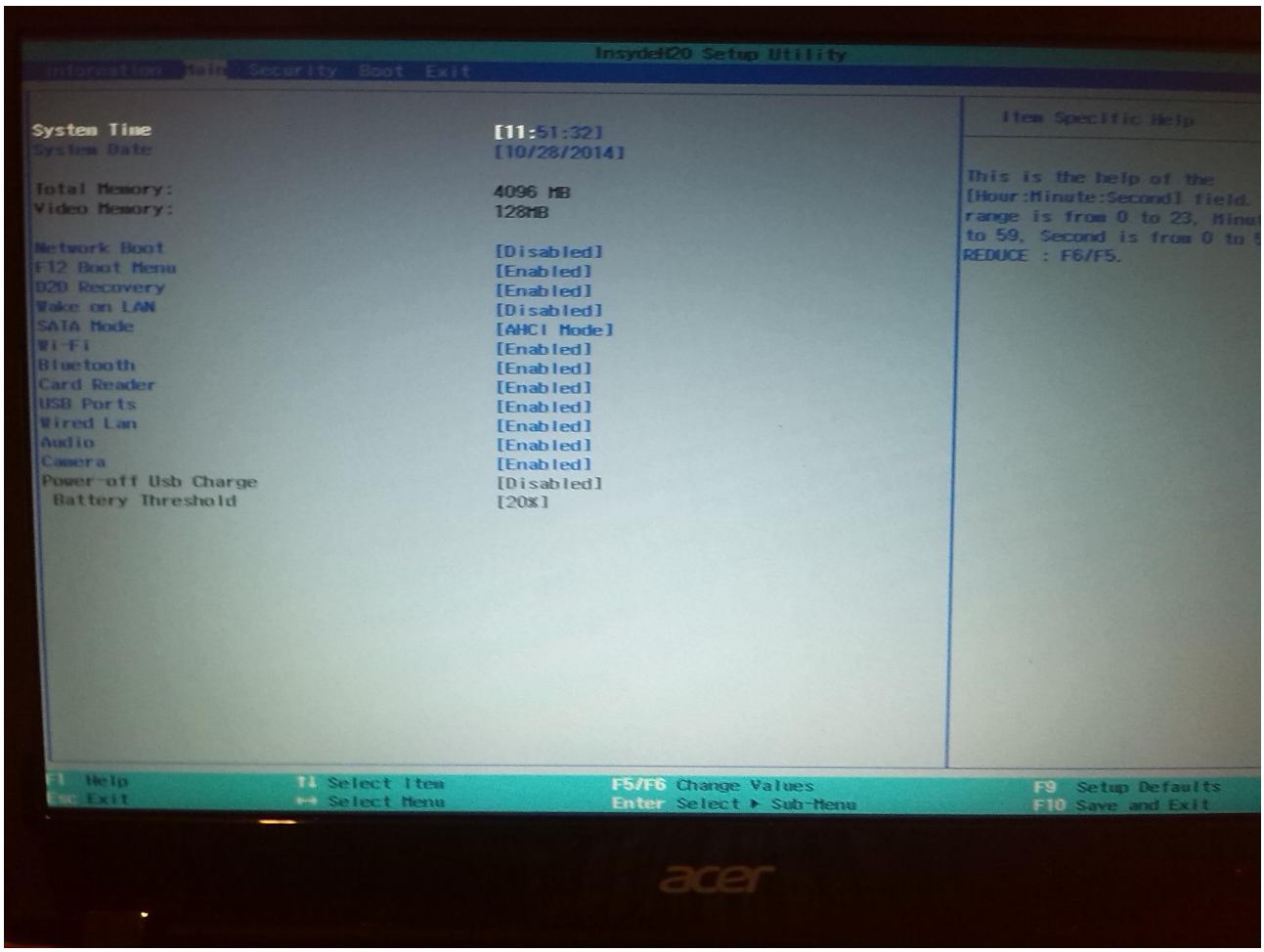
So before proceeding, make sure that you are installing Ubuntu with the same boot options as Windows. This way you will be able to choose which one to boot from in the same boot menu and not worry if one will work or not. From the Ubuntu UEFI Guide you can see that there is a section that teaches you how to know if you actually installed Ubuntu in the same Boot setup as Windows (UEFI Mode):

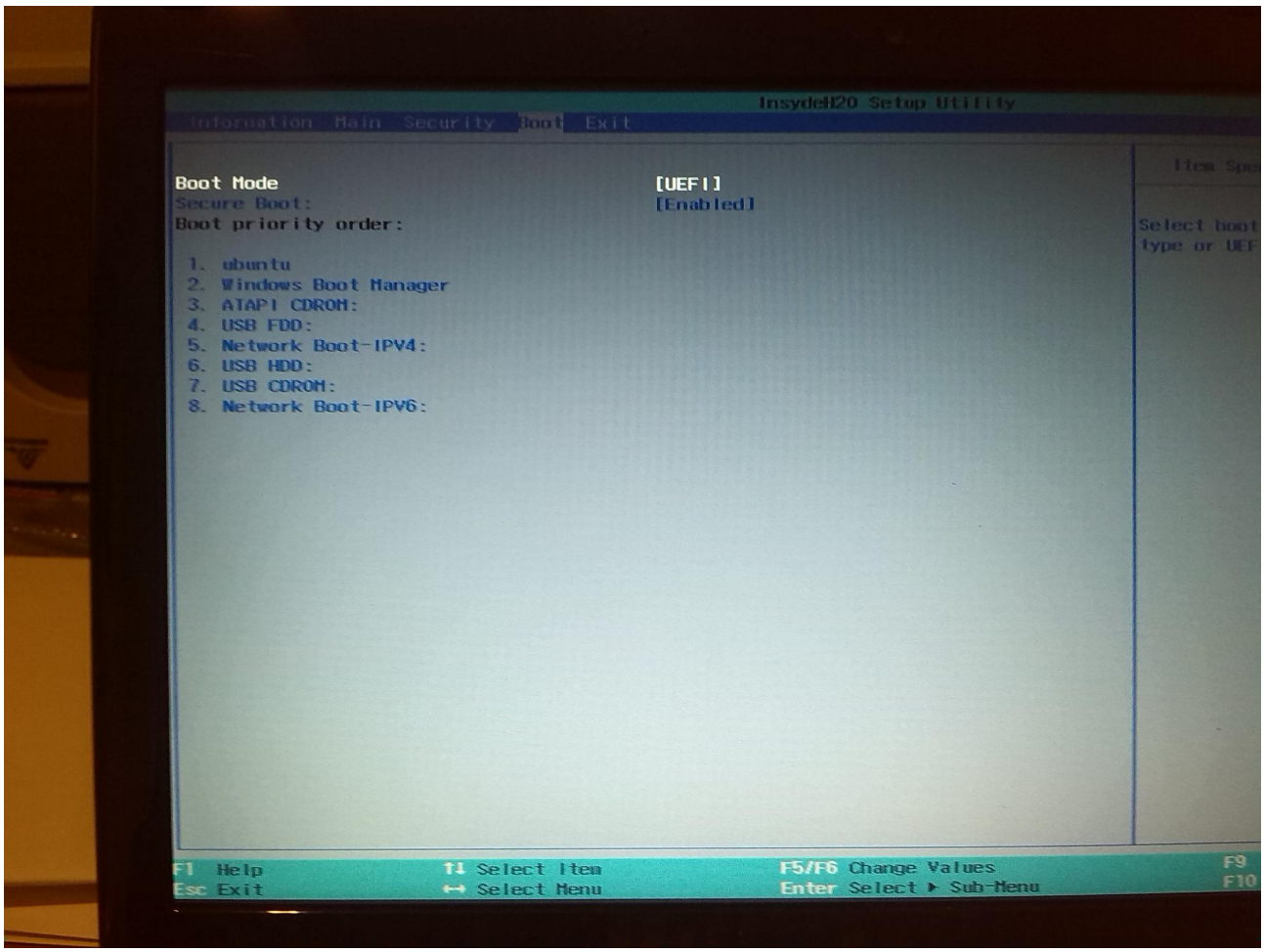
```
An Ubuntu installed in EFI mode can be detected the following way:

    its /etc/fstab file contains an EFI partition (mount point: /boot/efi)
    it uses the grub-efi bootloader (not grub-pc)
    from the installed Ubuntu, open a terminal (Ctrl+Alt+T) then type the following command:

    [ -d /sys/firmware/efi ] && echo "Installed in EFI mode" || echo "Installed in Legacy mode
```

9. Set the bios to boot from usb or DVD as appropriate and shutdown Windows 8 fully – it must not be in hibernate mode. If using a DVD you may need to insert it before shutdown and leave it in the drive. Note the screenshot below shows my UEFI boot order post my linux install

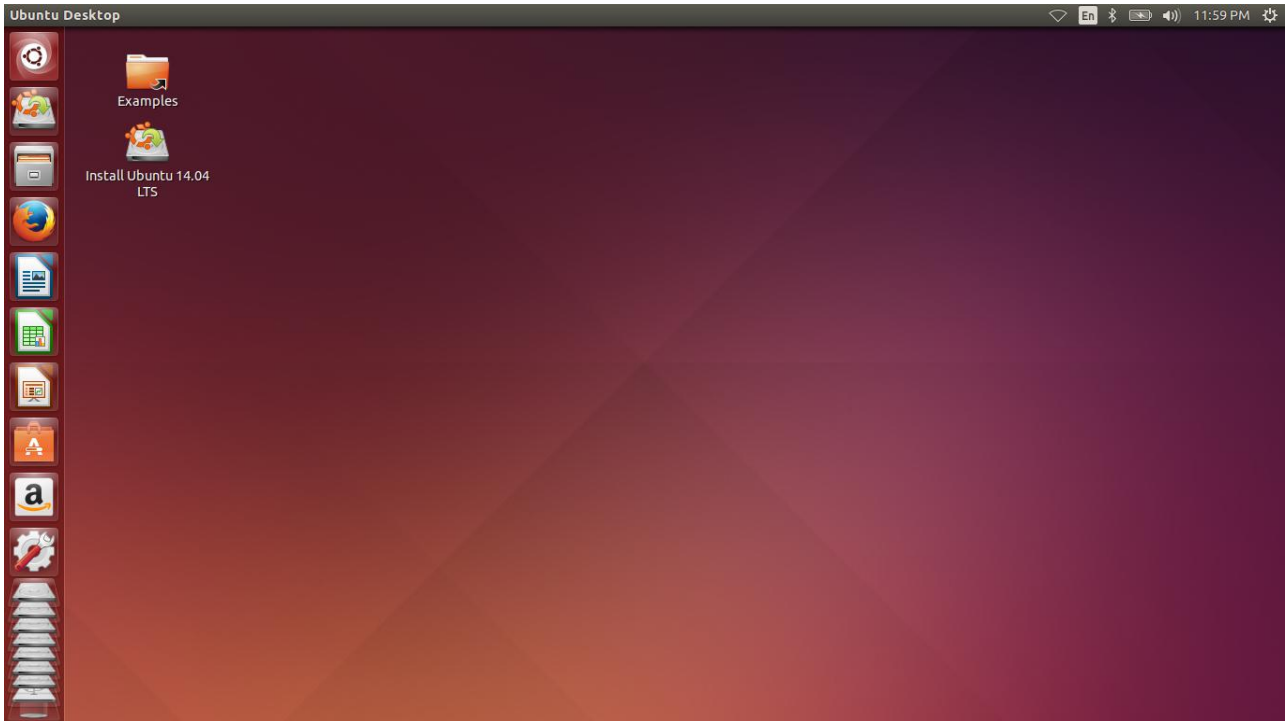

Insyde H20 Setup Utility
Information Main Security Boot Exit
System Time [11:51:32]
System Date [10/28/2014]
Total Memory: 4096 MB
Video Memory: 128MB
Network Boot [Disabled]
F12 Boot Menu [Enabled]
D2D Recovery [Enabled]
Wake on LAN [Disabled]
SATA Mode [AHCI Mode]
Wi-Fi [Enabled]
Bluetooth [Enabled]
Card Reader [Enabled]
USB Ports [Enabled]
Wired Lan [Enabled]
Audio [Enabled]
Camera [Enabled]
Power-off Usb Charge [Disabled]
Battery Threshold [20%]
Item Specific Help
This is the help of the [Hour:Minute:Second] field. range is from 0 to 23, Minu to 59, Second is from 0 to REDUCE : F6/F5.
F1 Help
Esc Exit
↑↓ Select Item
↔ Select Menu
F5/F6 Change Values
Enter Select ▸ Sub-Menu
F9 Setup Defaults
F10 Save and Exit
acer


InsydeH20 Setup Utility
Information Main Security Boot Exit
Boot Mode [UEFI]
Secure Boot: [Enabled]
Boot priority order:
1. ubuntu
2. Windows Boot Manager
3. ATAPI CDROM:
4. USB FDD:
5. Network Boot-IPV4:
6. USB HDD:
7. USB CDROM:
8. Network Boot-IPV6:
Item Spe
Select boot
type or UEF
F1 Help ↑↓ Select Item F5/F6 Change Values F9
Esc Exit ↔ Select Menu Enter Select ▸ Sub-Menu F10

10. Connect or insert your bootable usb drive or DVD and watch it boot into linux from it.

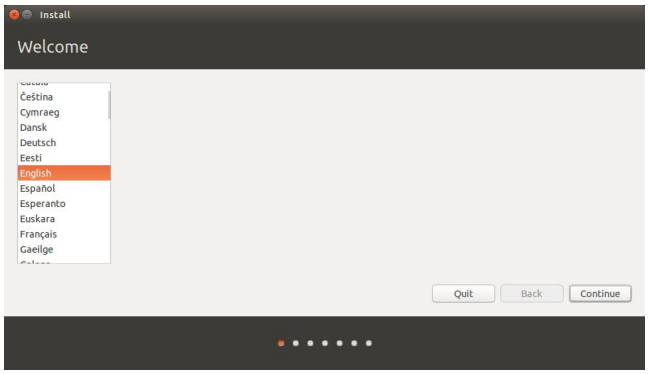
If, despite your selections in the BIOS, it didn't boot into your linux live CD or USB, then hold down the shift key whilst rebooting the computer.

One of the options that appeared let me boot from the USB drive into Ubuntu 14.04 live and you should have a similar option available to you.



When you first boot into the live version of Ubuntu you will be presented with a screen similar to the one above. The only difference is that I have closed the window that shows all the keyboard shortcuts to make it easier to highlight the "Install Ubuntu 14.04 LTS" icon.

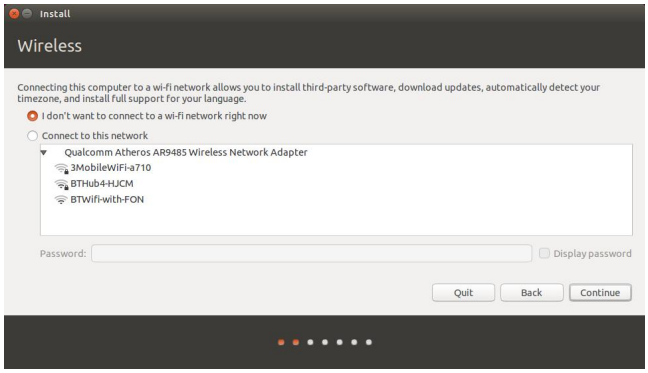
To begin the installation double click on the "Install Ubuntu 14.04 LTS" icon.



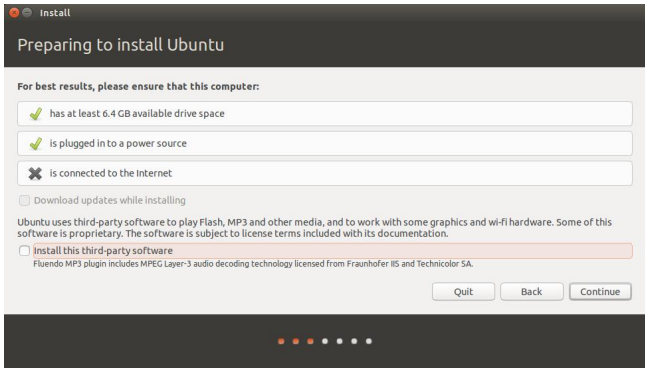
The first thing you need to do is decide which language you would like to use.

Unless you feel like the challenge isn't great enough I would choose the language that you would normally use.

Click "Next" to continue.


Install
Wireless
Connecting this computer to a wi-fi network allows you to install third-party software, download updates, automatically detect your timezone, and install full support for your language.
I don't want to connect to a wi-fi network right now
Connect to this network
Qualcomm Atheros AR9485 Wireless Network Adapter
3MobileWiFi-a710
BTHub4-HJCM
BTWifi-with-FON
Password:
Display password
Quit
Back
Continue

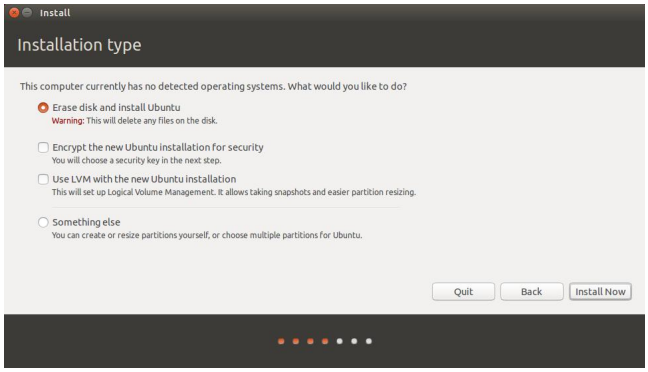
The next screen lets you choose which internet connection to use whilst installing Ubuntu.
If you have a good broadband connection you may wish to connect to it now so that you download updates as you go. This will slow down the initial install but will save time later on as you won't have to install lots of updates.


Install
Preparing to install Ubuntu
For best results, please ensure that this computer:
has at least 6.4 GB available drive space
is plugged in to a power source
is connected to the Internet
Download updates while installing
Ubuntu uses third-party software to play Flash, MP3 and other media, and to work with some graphics and wi-fi hardware. Some of this software is proprietary. The software is subject to license terms included with its documentation.
Install this third-party software
Fluendo MP3 plugin includes MPEG Layer-3 audio decoding technology licensed from Fraunhofer IIS and Technicolor SA.
Quit
Back
Continue

When you click "Next" you will be shown a tick list highlighting how prepared you are for installing Ubuntu.

As you can see I have 2 ticks because I have enough disk space and I am plugged into a power source. I chose not to connect to a network as this stage (hence the cross).

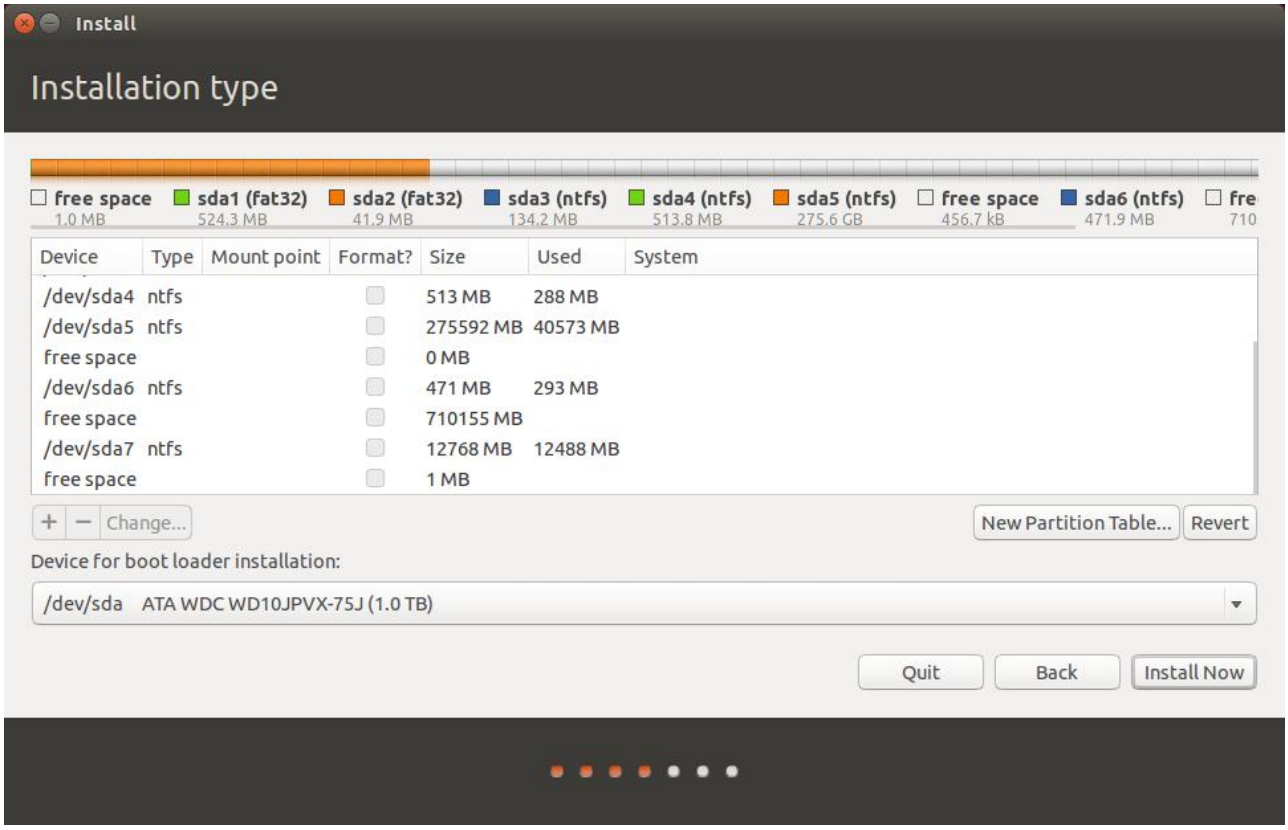
Click "Continue".


Install
Installation type
This computer currently has no detected operating systems. What would you like to do?
Erase disk and install Ubuntu
Warning: This will delete any files on the disk.
Encrypt the new Ubuntu installation for security
You will choose a security key in the next step.
Use LVM with the new Ubuntu installation
This will set up Logical Volume Management. It allows taking snapshots and easier partition resizing.
Something else
You can create or resize partitions yourself, or choose multiple partitions for Ubuntu.
Quit
Back
Install Now

In the past there used to be an option on the "Installation Type" screen to install alongside Windows.

If you are installing alongside Windows 7 on a non-EFI based system then you will still have that option.

Click on "Something Else" and click "Next".



The next screen may look rather intimidating but it is just showing your current disk layout.

Be very careful with the next few steps.

If you haven't taken that Windows backup, quit the installation, reboot and follow step 1 of this tutorial again.

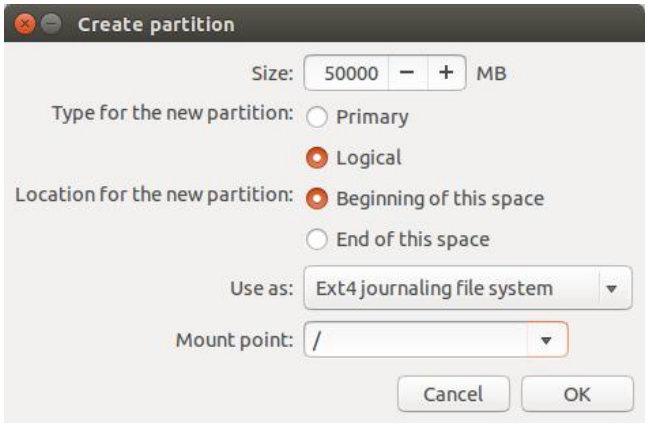
Look at the image above. You will see a large portion of free space (710155 MB). This is the free space you created when 'shrinking the volume' and where to put Ubuntu.

The free space is going to be split into 3.

The first partition is for Ubuntu and will be 50 Gigabytes in size.

The second partition is for your home partition and stores configuration files and your personal files such as music, pictures etc.

The third partition is for swap space and is used for intensive operations and suspending the computer.
When you have found the partition with free space, click on it and press the plus symbol (+) under the disk layout.

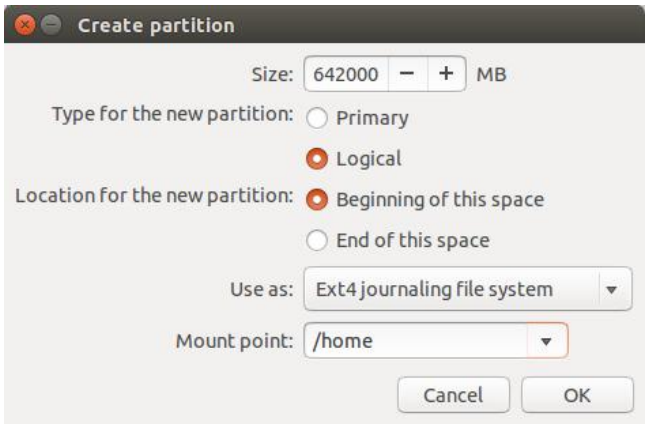


In the size box enter 50000, select logical as the partition type, select beginning of this space and choose EXT4 as the file system.

For the mount point choose / (this means root).

Click "OK".

The disk layout screen should now show a new partition for /.



Find the large section of free space again, click on it and press the plus symbol again (+).

This time you want to set the size to be the rest of the free disk space minus 2x the amount of memory in your computer.

If you have 8 gigabytes RAM, subtract 16 gigabytes.

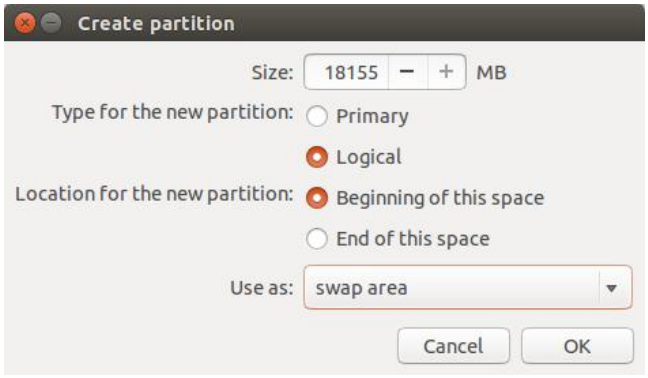
Again choose "Logical" as the partition type, beginning of this space for where to put the partition and EXT4 as the file system.

For the mount point choose /home.

The issue of how much swap space to use is constantly up for debate. Some people say you don't need any at all, some go for 1.5 times the amount of RAM and some say 2x.

Unless disk space is at a premium I would just go for the 2x and have done with it.

In theory if you are running lots of intensive processes such as video editing then the swap space is used to store memory that isn't currently being used (swapped) to disk. This is disk intensive and slows down your computer but it will help to prevent a crash. Swap space is also used for suspending your computer.



Now find the free disk space again, click on it and press the plus symbol. (+).

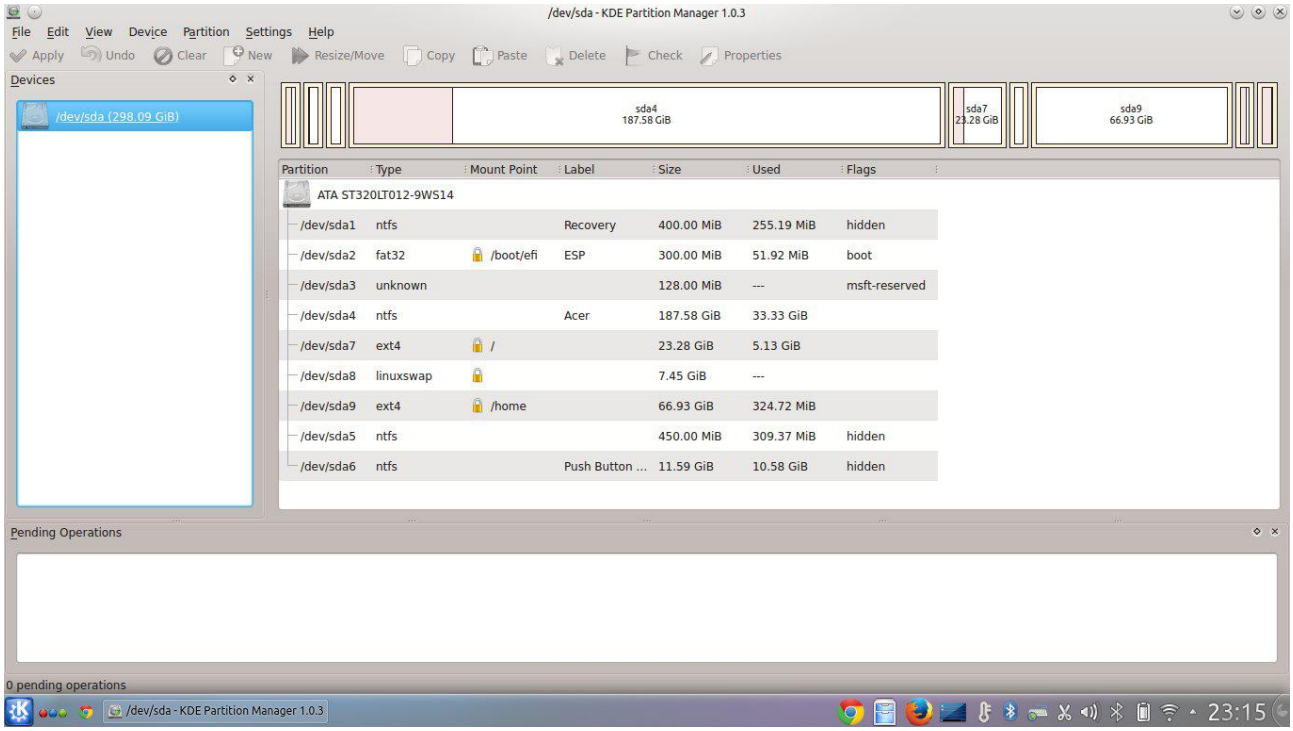
Leave the size as the rest of the free disk space, choose logical as the file system and beginning of this space as the location.

Choose "swap area" as the mount point.

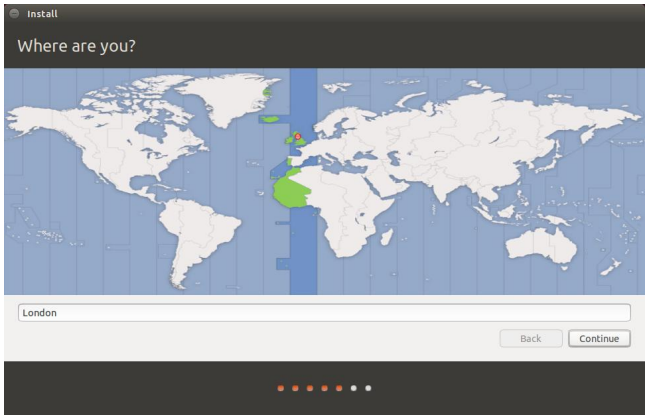
The final thing to concern yourself with when partitioning is where to install the boot loader.

By default it is set to /dev/SDA on the "Installation Type" screen. This can be changed but unless you are using multiple disks you should leave this well alone.

Here are the partitions on my Travelmate:


/dev/sda - KDE Partition Manager 1.0.3
File Edit View Device Partition Settings Help
Apply Undo Clear New Resize/Move Copy Paste Delete Check Properties
Devices
/dev/sda (298.09 GiB)
sda4 187.58 GiB
sda7 23.28 GiB
sda9 66.93 GiB
Partition Type Mount Point Label Size Used Flags
ATA ST320LT012-9WS14
/dev/sda1 ntfs Recovery 400.00 MiB 255.19 MiB hidden
/dev/sda2 fat32 /boot/efi ESP 300.00 MiB 51.92 MiB boot
/dev/sda3 unknown 128.00 MiB --- msft-reserved
/dev/sda4 ntfs Acer 187.58 GiB 33.33 GiB
/dev/sda7 ext4 / 23.28 GiB 5.13 GiB
/dev/sda8 linuxswap 7.45 GiB ---
/dev/sda9 ext4 /home 66.93 GiB 324.72 MiB
/dev/sda5 ntfs 450.00 MiB 309.37 MiB hidden
/dev/sda6 ntfs Push Button ... 11.59 GiB 10.58 GiB hidden
Pending Operations
0 pending operations
/dev/sda - KDE Partition Manager 1.0.3
23:15

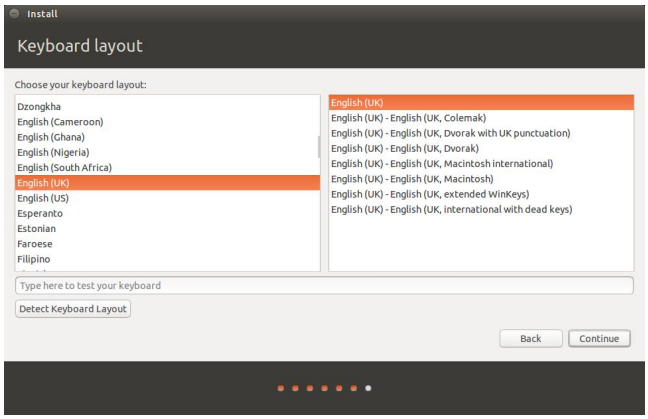
Press "Install Now" to continue.



The installation has now begun but whilst it is taking place you are asked a few configuration type questions.

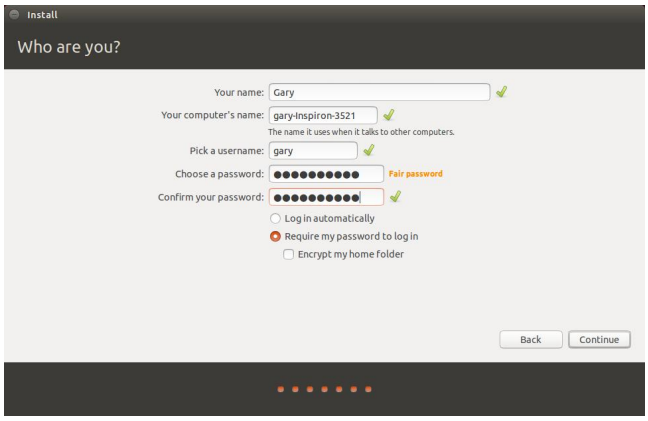
First of all choose your location by clicking on the map.

Press "Continue".



The next screen asks you to choose your keyboard layout.

Simply choose the correct one for you and press "Continue".



You will now be required to create a default user.

Enter your name, a name to identify your computer, a username and a password.

You can also choose whether to log in automatically or require a password each time.

Install
Welcome to Ubuntu 14.04
Fast and full of new features, the latest version of Ubuntu makes computing easier than ever. Here are just a few cool new things to look out for…
Installing system
Skip

A progress bar will now show you how far through the installation you are.

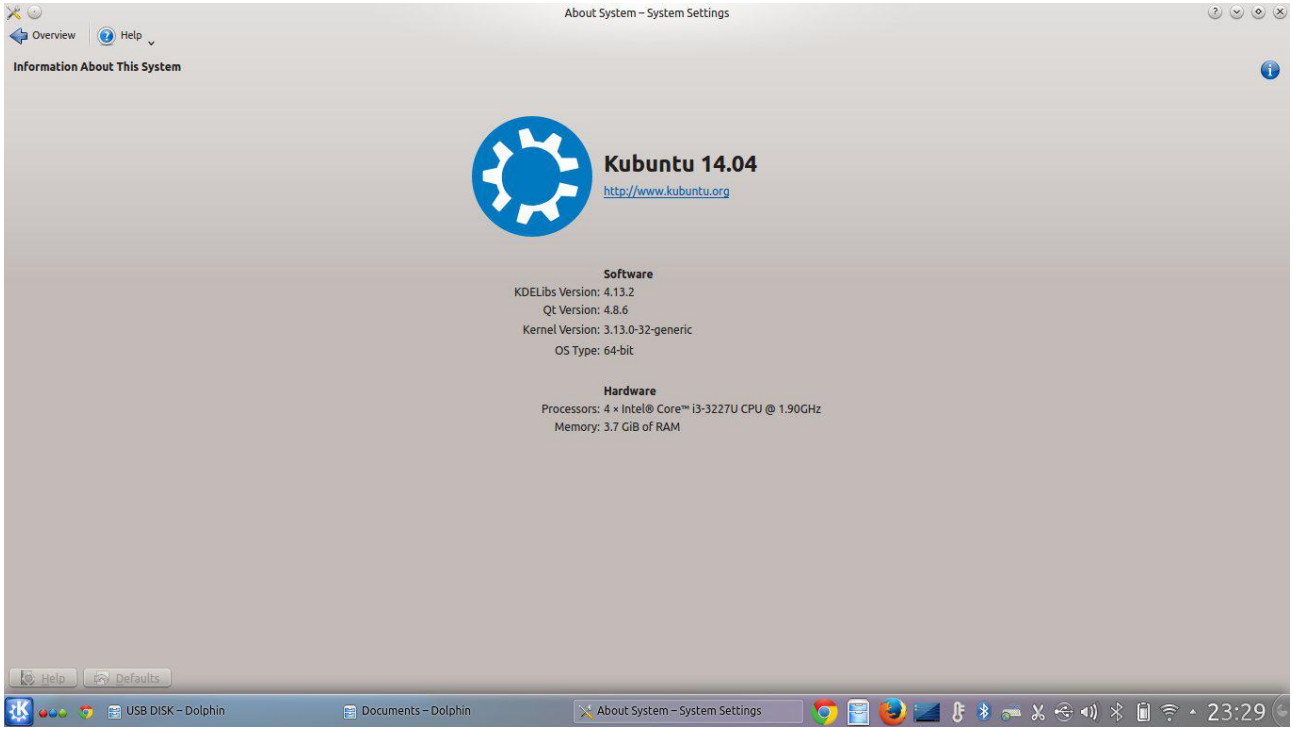
You can also view a selection of messages telling you all about Ubuntu.

At this point you can take another comfort break and depending on your computer's speed you will either have time to boil an egg or wash your car.

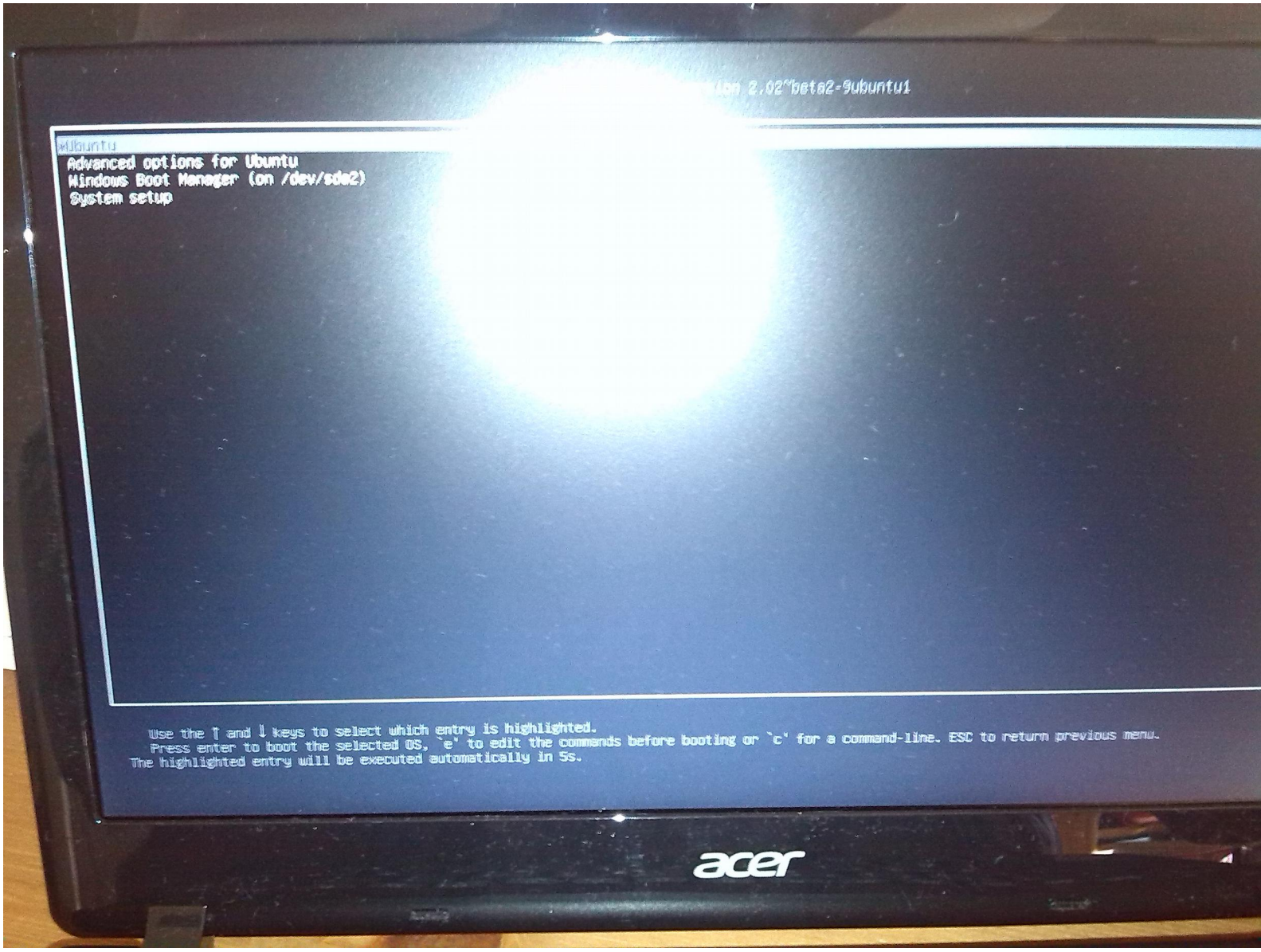
At the end of the process you will be asked whether you want to reboot to start using Ubuntu or to continue using the live version.

When I rebooted it went straight back into Windows and I had to reboot back into the live session anyway. So at this point you can either take my word for it and stay in the live session or you can reboot and see if the installation has worked without any further steps required.

Here is the system information for my linux install:



Here is the Ubuntu boot window on my Travelmate:


2.02~beta2-9ubuntu1
*Ubuntu
Advanced options for Ubuntu
Windows Boot Manager (on /dev/sda2)
System setup
Use the ↑ and ↓ keys to select which entry is highlighted.
Press enter to boot the selected OS, `e' to edit the commands before booting or `c' for a command-line. ESC to return previous menu.
The highlighted entry will be executed automatically in 5s.
acer

Results:
I found that I was able to use the F12 Boot manager to switch between an Ubuntu boot screen and a Windows boot screen. Both showed Windows and Ubuntu options, but I can only boot into Ubuntu from the Ubuntu Grub bootloader and Windows from the Windows Boot Manager. I have set my Boot order to be the Ubuntu bootloader first and Windows second, and I have also tested it in the reverse order. So, when I power on my Travelmate as it is at the moment the Ubuntu boot screen comes up and I just have to hit Return/Enter for it to load Ubuntu. If I want to load Windows I press the F12 key during POST and wait for the Windows bootloader to appear.

There are articles about how to 'fix' the bootloader so all options work from one, and I did try installing a Ubuntu Boot Repair program, but I chose not to spend time on trying to fix something that worked for me and wasn't broke.

Having installed Ubuntu with Secure Boot disabled and tested it with it disabled, I subsequently re-enabled Secure Boot and can report that Windows and Ubuntu are still working. You may see some conflicting advice on whether or not you can install with Secure Boot enabled, but I decided to play safe and follow the majority of the advice and disable it for the install.

Sources:

http://www.everydaylinuxuser.com/2014/05/install-ubuntu-1404-alongside-windows.html
http://askubuntu.com/questions/221835/installing-ubuntu-on-a-pre-installed-windows-8-64-bit-system-uefi-supported
https://help.ubuntu.com/community/UEFI